

Amendments to the Specification:

Please replace Paragraph [0007] with the following rewritten paragraph:

A1
Current flows from the power source through the positive DC lead to the conducting layer on the high side substrate. Current is then permitted to flow through one or more switching devices on the high side to a conducting layer, commonly referred to as a phase output layer on the low side. A phase terminal lead allows current to flow from this conducting layer on the low side to the motor. The current then flows from the motor to the corresponding conducting layer on the low side of a second switching pair through the low side switches and diodes to the negative DC lead to the power source.

Please replace Paragraph [0008] with the following rewritten paragraph:

A2
Current flowing through various inductive paths within the module transiently stores energy which increases energy loss, reduces efficiency, generates heat. When the flow of current changes, as in such a high frequency switching environment, large voltage overshoots often result, further decreasing efficiency. In addition, the DC terminals are commonly attached to one end of the power module, which forces current to travel further to some switches for some switching configurations, than for others, resulting in non-uniform current loops. Current loops that are not uniform result in uneven or inefficient motor performance. Additional materials regarding efficient configurations of power modules may be found in Application Serial No. 09/957,568(~~Attorney Docket No. 47869/255399 filed herewith~~), entitled “Substrate-Level DC Bus Design to Reduce Module Inductance,” Application Serial No. 09/957,001(~~Attorney Docket No. 47869/255395, filed herewith~~), entitled “EMI Reduction in Power Modules Through the Use of Integrated Capacitors on the Substrate Level,” and Application Serial No. 09/882,708 entitled “Leadframe-based Module DC Bus Design to Reduce Module Inductance” which are hereby incorporated by reference in their entirety.

A3 Please replace Paragraph [0016] with the following rewritten paragraph:

In yet another aspect, the present invention is directed to a DC bus for use in a power module. The DC bus includes a positive DC conductor bus plate and a negative DC conductor bus plate. A connector is fastenable from at least one of the positive or negative DC conductor bus plates. The connector includes a first end portion for forming an electrical connection with a substrate, a second end portion, and a compliant portion situated between the first and second end. The compliant portion includes a compressed position and a decompressed position. The first end portion is configured for forming an electrical connection with a substrate if the compliant portion is in the compressed position.

A4 Please replace Paragraph [0030] with the following rewritten paragraph:

Figure 12 is a cross-sectional side view of the power module view through the DC bus terminals. Terminals.

A5 Please replace Paragraph [0046] with the following rewritten paragraph:

Referring to Figure 1, an overhead view of the top of the power module is shown. The module has three positive leads 21 that are connectable to a power source, such as a battery, and three negative leads 23 that are likewise connectable to the negative terminal of a power source such as a battery, or ground. The module has three sets of phase terminals 15, 17, and 19. The cover 16 of the power module is held in place by adhesive. The module is attached to a coolant header or mounting by fasteners (not shown) through bushings 13. The fasteners are bolts, but other types of fasteners can be substituted therefore, as will be readily apparent to those of ordinary skill in the art. A non-conducting strip 25 holds leads 21 and 23 in place by providing a raised portion into which the leads 21 and 23 may be bolted.

A6 Please replace Paragraph [0050] with the following rewritten paragraph:

As will be understood by one of ordinary skill in the art, direct current flows from a power source such as a battery to the positive DC leads 21 and to the DC conductor bus plates 31. Current flows to a conducting layer in the high side 101 of the power module. The current

flows through the switches 33 and diodes 35 on the high side 101 through a conducting plate 37. The conducting plate 37 is connected to a conducting layer in the low side 103 of the power module by a connection located through a cut-out passage 39 underneath the bus bar. Current then flows from the conducting layer on the low side 103 through one of the sets of phase terminals 15, 17, or 19 to a three-phase motor (not shown). Current from the motor flows back to another set of phase terminals 15, 17, or 19, where it flows from the conducting layer on the low side 103 through the low side switches 33, 35 to the negative lead 23 of the bus bar 31 and back to the power source.

Please replace Paragraph [0051] with the following rewritten paragraph:

Figure 3 also shows pairs of phase terminals 15, 17, and 19. Three single phase terminals may be substituted for phase terminal pairs 15, 17, and 19. Alternatively, each phase terminal grouping, shown as pairs 15, 17, and 19, may include more than two phase terminals. Pairs of phase terminals 15, 17, and 19 are used for ease of connecting to switches 33 on the lowhigh side 103 of the power module.

Please replace Paragraph [0059] with the following rewritten paragraph:

Thus, counter flow of current is permitted, thereby canceling the magnetic fields and their associated inductances. In addition, the parallel bus plates 57 and 59 create capacitance. As will be understood by one of ordinary skill in the art, a capacitor dampens voltage overshoots that are caused by the switching process. Thus, the DC bus plates 57 and 59 create a magnetic field cancellation as a result of the counter flow of current, and capacitance damping as a result of also establishing a functional capacitance between them. Figure 5 shows the DC bus plates 57 and 59 placed perpendicular to the high side switching assemblysubstrate 55 and low side switching assemblysubstrate 53, however, the DC bus plates 57 and 59 may also be placed parallel to the switching assemblysubstrates 53 and 55 and still achieve counter flow of current and reduced inductances.

A1
Please replace Paragraph [0061] with the following rewritten paragraph:

Referring now to Figure 8, a cross-sectional front view of the power module without coolanting intake 91 and coolant outlet 93 out take is shown.

A10
Please replace Paragraph [0063] with the following rewritten paragraph:

Referring to Figures 9, 10, and 11, positive terminal 21, negative terminal 23, and phase terminal 17 are shown. The positive phase-terminal 21 is electrically connected to a positive DC bus plate 59, and the negative phase-terminal 23 is electrically connected to a negative DC bus plate 57. The positive DC bus plate 59 and the a negative DC bus plate 57 are separated by an insulating layer 51.

A11
Please replace Paragraph [0064] with the following rewritten paragraph:

Connectors 201, 203, 204, 205 and 207 are configured for forming an electrical connection to the substrate of the power module. Connector 207 electrically connects phase terminal 17 to the substrate, connector 205 electrically connects the positive DC bus plate 59 to the substrate, and connector 201 electrically connects the negative DC bus plate 57 to the substrate. Connectors 203 and 204 electrically connects the phase conducting layers between the substrates.

A12
Please replace Paragraph [0065] with the following rewritten paragraph:

Figure 10 illustrates the electrical connection between phase terminal 15 and connector 207. Specifically, the phase terminal 15 is connected to connector 207 by a vertical plate 209 for electrical connection.

A13
Please replace Paragraph [0066] with the following rewritten paragraph:

Turning now to Figure 12, a cross-sectional side view of the power module viewed through the DC bus terminals is shown. The coolant cavity 95 runs the length of the module to outlettake 93. The high side substrate switches 55 are shown inside the module 29 with positive DC leads 21.

Please replace Paragraph [0069] with the following rewritten paragraph:

R14
Referring now to Figure 15, a top section view of the module below the printed circuit board is shown. The positive DC bus plate 59 and the negative DC bus plate 57 are allowed to extend into a low side slot in the middle of the module cover. The DC bus 31plate has openings for a passage 39 from the high side 101 to the low side 103. Switches 33 and diodes 35 are shown on a substrate. As stated in the discussion accompanying Figure 3, the current must be able to flow from the conducting layer on the high side 101 of the substrate to the conducting layer on the low side 103 of the substrate. The current flows from a conducting layer of the substrate on the high side 101, through the switches 33 and diodes 35 to the conducting plate 37. The conducting plate 37 is connected through the passage 39 to a plate 73 on the low side 103 of the module.

Please replace Paragraph [0078] with the following rewritten paragraph:

R15
Figure 24 is a side view of a connector in a compressed position. The connector 201 includes a first end portion 225 for forming an electrical connection with a substrate and a second end portion 221. The connector 201 includes a compliant portion 223. The curvature of the compliant portion 223 is greater in the decompressed position illustrated in Figure 23 than in the decompressed position shown in Figure 24.